EXCURSION TO CUXTON.

JUNE 4TH, 1904.

Director: F. J. BENNETT, F.G.S.

Excursion Secretary: HAROLD WALKER, A.R.C.Sc., F.G.S.

(*Report by* THE DIRECTOR.)

OWING to its being a whole-day Excursion and also, perhaps, to the fact that all the sections to be seen were in Drift—with few, if any, fossils—only a small contingent turned up under the charge of the Excursion Secretary, Mr. Walker. They were met at the station by the Director and Canon Toone, the rector of Cuxton, who most kindly accompanied them part of the time, pointing out matters of interest, and who had also proffered refreshment, for which time did not permit.

While waiting for the train, the Director had learnt from the station-master, that a skeleton had recently been dug up on Cuxton Hill close to the church, and that he was so much struck by its likeness to the cave type of skull—a nearly perfect one—that he made a sketch of it, which he gave to the secretary. The bones, under a coroner's order, had been placed in a box and buried in the churchyard. This seems rather unfortunate in the interests of science.

The Director then showed them the chalky drift, with some flints and sarsens banked up against the extremity of the eastern spur, which, with that facing it from the north, seemed to him may at one time have been united and have shut in the valley, forming the basin of a lake to the west of Cuxton.

The party then proceeded to view a section of brickearth on the eastern side of a ridge within these spurs, which, at least, was evidence of still water in that direction. The Director also pointed out in the section some chalky drifts within the brickearth, a fine buff loam with a few flints, and thought that the brickearth might be due to the decalcification of this chalky drift.

Coming to the other side of this ridge, to a spot whence a view could be obtained up the Cuxton valley, the Director said a few words on the possible formation of such a dry-chalk valley.

The Geological Survey, he said, had usually mapped these valleys, excepting the mappable gravel near their mouths, as bare of Drift; but a little consideration would soon show that, with such a widely-branching and deep-cut valley as this, which must once have contained water, so much material cannot have been removed without leaving some remains in the higher parts of it; and so in the drift map he was now making for himself he had mapped Drift right up to the heads of all the branches of the contributory valleys.

He also stated that the well-marked, and, perhaps, once-

conjoined spurs just mentioned, showed at the mouth of the valley what was only a closing episode of what must have occurred all the way along it, and that higher up he could, he thought, see other spurs that had once been connected and had held lakes. He pointed out, also, that within these spurs there was a distinct flattening of the valley bottom caused by the Drifts that concealed the true bottom. This flattening he had noticed quite high up the heads of the upper reaches of the valley in question, and it was common, he considered, to all these dry-chalk valleys.

He considered that in its initial stage this valley, or the site of it, might have been occupied by small lakes, Bourne-lakes he might term them, such as those he had seen at Croxton Heath, near Thetford, Norfolk, a chalk area thinly covered by Glacial Drift, and mapped by him. These lakes rose and fell with the rainfall; one of them was of a remarkable shape, and was called Punch-bowl Mere, and was a deep cylindrical hollow perhaps 60 feet deep, and 100 or more across.

Mr. Dibley said a few words about the variations in the level of the zones in the chalk, pointing to an anticline, and the Director then quoted what Prof. Hughes had said in the *Geological Survey Memoir*, vol. iv, about this anticline on p. 350. He says, "The chalk on the western side of the Medway dips to the N.W., and that on the eastern side to the N.E., therefore, the river runs along an anticlinal axis parallel to the general northerly dip. East of Wouldham and south of Borstal a north-easterly dip can be clearly made out, while west of Wrexham and in the large pit in the front of the 'Coach and Horses' below Frindsbury, the beds may be seen dipping to the north-north-west, and in the quarry at Whorn's Place may be seen dipping north-north-west, though this is not very clear."

The party then crossed the valley, when Canon Toone pointed out the evidences of the vast amount of gravel that had been removed from the bottom of it by a London contractor. The hill above the church was then visited, capped, as pointed out by the Director, with Southern Drift. In this Dr. Salter recognised a piece of sandstone from the Hastings Bed. Passing through the churchyard some very ancient and rudely incised faces on some old tombstones were pointed out by the Director, who had been making sketches of these from various churchyards in Kent. His sketches were shown and much interested the party, and he stated that so overgrown were these stones by lichen that until that was rubbed away nothing could be seen. The Director also pointed out the old pre-historic cultivation terraces so well seen in the churchyard and rectory grounds. There also the Rector showed where traces of Roman foundation had been found, and exhibited the fine palæolithic implements found quite recently by the Director in his presence

in the bank of the Rectory drive, from the spot where all those fine ones now in the Rochester Museum were found by Mr. G. Payne, F.S.A.

The party then took leave of Canon Toone, thanking him for his courtesy and offer of refreshments; the party then examined the chalk rubble drift in the road cutting by the church, mixed with much sand and loamy in places.

Whorn's Place was then passed, and the Director read a few notes kindly drawn up for him by Miss Sibley, late schoolmistress, and still parish clerk of Cuxton, stating that it was called so after Sir W. Whorne, Lord Mayor of London, 1487.

Nothing now remains except the fine red-brick barn said to be the largest tythe barn in Kent, excepting, perhaps, that of Boxley. The old house was removed when the railway was made.

Lunch was eaten close to Whorn's Place in Bore Hole Quarry, and after this the chalky drift on the hill slope by the quarry was examined, with a few land shells of which three varieties were found.

After a walk along the Pilgrims' Road, a footpath was taken across the valley bottom to Lower Halling.

The Director remarked on the flatness of this valley bottom as evidence of drift, and full proof of this was then seen at almost the lowest part of the valley in the deep tramway cutting, which most unexpectedly showed nearly 40 feet of fine chalky drift, termed "Scarp" Drift by the Director, with occasional lenticular beds of flints and of buff loam. The passage of this fine chalky drift into loam was once shown in a small pit near the railway and the river, but now closed.

The well-marked detached hill between Upper and Lower Halling, at the base of which is the cutting in question, was stated by the Director to be also capped with Southern Drift like the one near Cuxton Church. He then made some remarks on the thinning of beds by vertical dissolution producing local "Residual Drift" that had not been transported, and the thinness of the two patches on the hill tops in question, and indeed of much of the Drift within the Weald, was referred to this vertical dissolution, a conclusion with which Dr. Salter was inclined to agree.

The Director then explained what he meant by the term "Scarp Drift," and "Residual Drift," so well seen in the cutting, and at School Farm pit, and in the sand pit by Peters' works.

He stated that since his residence, now for over four years, in Kent since retiring from the Survey, he has been naturally much impressed with the vast amount of the waste suffered by the wearing back of the Chalk escarpment, and thought that some of this must surely be still to be seen. Also this waste must largely consist of chalky matter, as the Chalk with Flints was very

thin on the crest of the scarp, compared to the middle or lower, with few or no flints. At the base of the scarp he noticed distinct flats or terraces, and that these were covered with a pellety chalk. He then began mapping these terraces showing this pellety chalk. After a time he found full confirmation of the existence of this chalky Scarp Drift in the tram cuttings along those chalky flats, of which the one they had seen was a very good example.

Halling Churchyard was visited, and examples of these old, quaint tombstones seen. The oldest he had yet seen bore the date of 1679, and was most archaic. The very few older than this were quite plain.

The ferry then was taken, and the Scarp Drift at School Farm pit was visited, and after that a shallow one by Peters' works. There was found a small section of the Southern Drift beneath Chalky drift, in which Hastings Sandstone again was found.

Then the deep "sand hole" by Peters' works was visited, by kind permission of Mr. Peters, who had also placed ladders to help to explore this hole.

Some of the more adventurous followed the Director down these ladders, and saw the 18 feet of Chalky Drift, with many large, unworn flints, a few brown ones at the top, all so intermixed with sand as to be dug and sifted merely to obtain this. Below was seen the fine sand, devoid of any chalky drift, but as to what this sand might be no one ventured an opinion, in the absence of any fossils.

In the chalky drift above, numerous mammoth remains have been found, among them a tusk 14 feet long.

The river was then crossed by ferry, and an early train taken to Aylesford, and a much needed tea obtained at "The George."

Much refreshed after this, the party visited Mr. Wagon's great gravel pit. All they saw there much impressed and interested them. This pit has been visited on former occasions.

The only new evidence was that afforded by the Director, who pointed out a thin capping of chalky Scarp Drift over the Southern Drift, thus showing two distinct drifts there of different origin.

This Scarp Drift thickens to the north to some 18 feet, as shown in the recent sewage sections at Aylesford.

The excursion then terminated with the usual vote of thanks to the Director, which was acknowledged by him.

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